

## PART 1 - GENERAL

### 1.1 RELATED SECTIONS

Section 03300 Cast-in-Place Concrete

Section 05120 Structural Steel

Section 07535 Ethylene Propylene (EP) Roofing

Section 07920 Joint Sealants

### 1.2 SUBMITTALS

Submit the following in accordance with Section 01330 "Submittal Procedures."

#### 1.2.1 SD-02, Shop Drawings

a. Submit shop drawings showing complete layout and configuration of system, equipment locations and all other components and accessories. Shop drawings shall have been reviewed by a professional engineer complete with calculations. The shop drawings shall include installation and rigging instruction and all necessary restrictive and non-restrictive working usage notes and general safety notes.

b. Provide a safety inspection log book for yearly inspections.

c. Submit shop drawings showing complete layout and configuration of complete window washing system, including locations and all other components and accessories.

d. Clearly indicate design details, window drops, hardware and installation details.

e. Include all necessary Restrictive and Non Restrictive Working Usage Notes and General Safety Notes.

#### 1.2.2 SD-03, Product Data

a. Provide product data on all components and accessories of system.

### 1.3 DESIGN

1.3.1 Design a window washing system that suits the building, plans, specifications, standards and codes contained in Section 1.4.

1.3.2 Design all anchor components to provide an adequate attachment means suited to concurrent window washing practices and compatible with industry standard equipment.

1.3.3 Ensure that all anchor components meet proper engineering principles and have been designed by a Professional Engineer qualified in the design of window cleaning equipment, it's application and safety requirements.

1.3.4 Penetrate roof only where necessary. If possible attach to mechanical screens.

## 1.4 STANDARDS AND CODES

### 1.4.1 Design a window washing system in accordance with the following standards;

- a. Federal OSHA standard 1910.66, subpart D (Walking and Working Surfaces)
- b. Appendix C to 1910.66 Personal Fall Arrest Systems.
- c. Department of Labor Memorandum to Regional Administrators for descent control devices, by Patricia K. Clark, directorate of Compliance Programs.

### 1.4.2 Comply with the requirements of the AISC publication: “Load and Resistance Factor Design Specification for Structural Steel Buildings”, the AIAI publication: “Specification for Design of Cold-Formed Steel Structural Members (1986 &1989 Addendum)” and the Aluminum association’s publication: “Specification for Aluminum Structures:.

### 1.4.3 Welding shall comply with “AWS D1.1 Structural Welding Code-Steel” and shall be performed by welders qualified to work in New Mexico.

### 1.4.4 Comply with the Aluminum Association publication No. 30: “Specification for Aluminum Structures”, and with AWS D1.2-90 “Structural Welding Code-Aluminum”.

## 1.5 DELIVERY AND STORAGE

Deliver materials to the site in an undamaged condition, in the original containers or packages complete with accessories and instructions. Store materials in a safe, dry location until needed for installation.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURER

#### 2.1.1 This specification is generally based on systems currently being manufactured by PRO-BEL, The Safety Roof Anchor Company. Other manufactured products meeting this specification may be substituted provided that the manufacturers show proof of products insurance. Equipment details must be approved by the Contracting Officer. Companies providing this equipment must be normally engaged in the design and manufacture of window washing equipment.

### 2.2 TIE BACK LIFELINE ANCHORS

#### 2.2.1 Anchoring system shall be capable of resisting with out fracture or pull out with a force of 5,000 lbs. Applied in any direction

#### 2.2.2 Safety anchoring eye shall be made of not less than ¾ inch diameter material or equivalent with an eye opening not less than 1.5 inch diameter or equivalent. The anchor eye shall be made of stainless steel or other corrosion resistant material. Bolts and connecting hardware shall be made of stainless steel or hot dipped galvanized material.

#### 2.2.3 All steel bases shall be hot dipped galvanized mild steel.

#### 2.2.4 Deformed threads of all safety anchor studs behind nuts after nuts have been tightened.

- 2.2.5 Multiple cast in place anchors studs shall be made of hot dipped galvanized mild steel. Single insert anchor stud securement bolt must be made of stainless steel.
- 2.2.6 Drilled concrete anchors shall only be adhesive epoxy anchors manufactured by U-pat or Hilti. Mechanical fasteners should not be used. If adhesive securement is considered 100% of the inserts are to be tested 5,000 lbs.
- 2.2.7 Weldment roof anchors must be attached to steel that is large enough to accept a four inch diameter tube complete with 100% weld. The structure or a plate must be provided to accept this anchor and must be a minimum 5 inches wide.
- 2.2.8 All wall anchors must be properly flashed into the surface to which they are applied.
- 2.2.9 All roof anchors must be properly roofed in. All stand-alone metal roof anchors must be directly flashed into the roofing. Coordinate with the roofing contractor. Rubber gaskets, worm gears, grommets and pitch pans must not be used.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- 3.1.1 Examine job conditions before commencement of work. Commencement of work will denote acceptance of existing conditions unless the client has been notified in writing of unacceptable conditions prior to commencement.
- 3.1.2 Faults occurring in the work completed under this Section of the Specification due to the acceptance of incorrect conditions of existing work will be rectified at no cost to the owner.

#### 3.2 INSTALLATION

- 3.2.1 Install life line anchors and davit bases and arms, according to shop drawing(s). The Specifications, the manufacturer's instructions.
- 3.2.2 Provide all items to be installed. Provide handling, installation instructions, anchorage information, roughing-in dimensions, templates and service requirements for completion of the work of this Section. Assist or supervise, or both, the setting of anchorage devices when handled by others. Provide advice and assistance with respect to construction of other work related to products specified in this section.
- 3.2.3 Install all work true, level, tightly fitted, and flush to adjacent surfaces where required for installation.
- 3.2.4 Provide anchorage and mounting devices required for the installation of each product.

#### 3.3 ADJUSTMENT & FINAL INSPECTION

- 3.3.1 Verify that all work done under this section has been completed correctly and that all installed products function properly. Adjust items where necessary to ensure satisfactory operation.
- 3.3.2 Complete the inspection log book to certify system for use.

END OF SECTION